

```
import pandas as pd
df=pd.DataFrame({"a":[4,5,6], "b":[7,8,9]},index=[1,2,3])
print(df)
```

```
↕
   a  b
1  4  7
2  5  8
3  6  9
```

```
import pandas as pd
df=pd.DataFrame([[4,5,6],[7,8,9]],index=[1,2],columns=['a','b','c'])
print(df)
```

```
↕
   a  b  c
1  4  5  6
2  7  8  9
```

```
import pandas as pd
df=pd.DataFrame()
print(df)
```

```
↕ Empty DataFrame
Columns: []
Index: []
```

```
import pandas as pd
data=[1,2,3,4]
df=pd.DataFrame(data)
print(df)
```

```
↕
   0
0  1
1  2
2  3
3  4
```

```
import pandas as pd
data=[['Alex',10],['Bob',12]]
df=pd.DataFrame(data,columns=['Name','Age'])
print(df)
```

```
↕
   Name  Age
0  Alex   10
1   Bob   12
```

```
import pandas as pd
data={'Name':['Alex','Bob'],'Age':[10,12]}
df=pd.DataFrame(data)
print(df)
```

```
↕
   Name  Age
0  Alex   10
1   Bob   12
```

```
import pandas as pd
mydataset={'Name':['Alex',"Bob"], 'Age':[10,12]}
myvar=pd.DataFrame(mydataset)
print(myvar)
```

```
↕
   Name  Age
0  Alex   10
1   Bob   12
```

```
import pandas as pd
data=[{'a':1,'b':2},{ 'a':5,'b':10,'c':20}]
df=pd.DataFrame(data)
df
```

```
↕
   a  b   c
0  1  2 NaN
1  5 10 20.0
```

```
import pandas as pd
data=[[1,2],[5,10]]
df=pd.DataFrame(data,index=['first','second'],columns=['a','b'])
df
```



	a	b
first	1	2
second	5	10

```
import pandas as pd
data={'Name':['Jai','Princi'],'Height':[5.1,6.0],'Qualification':['Msc','MA']}
df=pd.DataFrame(data)
address=['Delhi','Bangalore']
df['Address']=address
df
```



	Name	Height	Qualification	Address
0	Jai	5.1	Msc	Delhi
1	Princi	6.0	MA	Bangalore

```
import pandas as pd
data={'Name':['Jai','Princi'],'Height':[5.1,6.0],'Qualification':['Msc','MA'],'Address':['Delhi','Bangalore']}
df=pd.DataFrame(data)
del df['Address']
df
```



	Name	Height	Qualification
0	Jai	5.1	Msc
1	Princi	6.0	MA

```
import pandas as pd
data={'Name':['Jai','Princi'],'Age':[27,25],'Qualification':['Msc','MA'],'Address':['Delhi','Bangalore']}
df=pd.DataFrame(data)
df.drop(['Address'],axis=1,inplace=True)
df
```




	Name	Age	Qualification
0	Jai	27	Msc
1	Princi	25	MA

```
import pandas as pd
data={'Name':['Jai','Princi'],'Age':[27,25],'Qualification':['Msc','MA'],'Address':['Delhi','Bangalore']}
df=pd.DataFrame(data)
df.pop('Age')
df
```



	Name	Qualification	Address
0	Jai	Msc	Delhi
1	Princi	MA	Bangalore

```
import pandas as pd
data={'Name':['Jai','Princi'],'Age':[27,25],'Qualification':['Msc','MA'],'Address':['Delhi','Bangalore']}
df=pd.DataFrame(data)
print(df)
df.rename(columns={'Address':'Place'},inplace=True)
df
```



	Name	Age	Qualification	Address
0	Jai	27	Msc	Delhi
1	Princi	25	MA	Bangalore

	Name	Age	Qualification	Place
0	Jai	27	Msc	Delhi
1	Princi	25	MA	Bangalore

```
import pandas as pd
data={'Name':['Jai','Princi'],'Age':[27,25],'Qualification':['Msc','MA'],'Address':['Delhi','Bangalore']}
df=pd.DataFrame(data)
print(df)
df.columns=['A','B','C','D']
df
```

```
↕
```

	Name	Age	Qualification	Address
0	Jai	27	Msc	Delhi
1	Princi	25	MA	Bangalore


```
↕
```

	A	B	C	D
0	Jai	27	Msc	Delhi
1	Princi	25	MA	Bangalore

```
import pandas as pd
df = pd.DataFrame([[1, 2], [3, 4]], columns = ['a','b'])
df1 = pd.DataFrame([[5, 6], [7, 8]], columns = ['a','b'])
df = pd.concat([df, df1], ignore_index=True)
df
```

```
↕
```

	a	b
0	1	2
1	3	4
2	5	6
3	7	8

```
import pandas as pd
data = {'Name':['Jai', 'Princi', 'Gaurav', 'Anuj'],
        'Age':[27, 24, 22, 32],
        'Address':['Delhi', 'Kanpur', 'Allahabad', 'Kannauj'],
        'Qualification':['Msc', 'MA', 'MCA', 'Phd']}
df = pd.DataFrame(data)
df
df.drop(0,axis=0,inplace=True)
df
```

```
↕
```

	Name	Age	Address	Qualification
1	Princi	24	Kanpur	MA
2	Gaurav	22	Allahabad	MCA
3	Anui	32	Kannau	Phd

```
import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'age': [25, 32, 18, 47],
        'gender': ['F', 'M', 'M', 'M'],
        'height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df = df['name']
df
```

```
↕
```

	name
0	Alice
1	Bob
2	Charlie
3	Dave

```
import pandas as pd
data = {'Name':['Jai', 'Princi', 'Gaurav', 'Anuj'],'Age':[27, 24, 22, 32],'Address':['Delhi', 'Kanpur', 'Allahabad', 'Kannauj'],'Qualif:
df = pd.DataFrame(data)
print(df[['Name', 'Qualification']])
```

```
↕
```

	Name	Qualification
0	Jai	Msc
1	Princi	MA
2	Gaurav	MCA
3	Anuj	Phd

```
import pandas as pd
data = {'Name': ['Jai', 'Princi', 'Gaurav', 'Anuj'], 'Age': [27, 24, 22, 32], 'Address': ['Delhi', 'Kanpur', 'Allahabad', 'Kannauj'], 'Qualif': ['B.Tech', 'MBA', 'M.Tech', 'M.Sc']}
df = pd.DataFrame(data)
df1=df.filter(items=['Name', 'Age'])
df1
```

	Name	Age
0	Jai	27
1	Princi	24
2	Gaurav	22
3	Anui	32

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.filter(like='eigh')
df1
```

	Height
0	1.62
1	1.78
2	1.65
3	1.83

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.filter(regex='e|a', axis=1)
df1
```

	Name	Age	Gender	Height
0	Alice	25	F	1.62
1	Bob	32	M	1.78
2	Charlie	18	M	1.65
3	Dave	47	M	1.83

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Alice'],
        'Age': [25, 32, 18, 25],
        'Gender': ['F', 'M', 'M', 'F'],
        'Height': [1.62, 1.78, 1.65, 1.62]}
df = pd.DataFrame(data)
df = df.drop_duplicates()
df
```

	Name	Age	Gender	Height
0	Alice	25	F	1.62
1	Bob	32	M	1.78
2	Charlie	18	M	1.65

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Alice'],
        'Age': [25, 32, 18, 25],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df = df.drop_duplicates(subset=['Name', 'Age'])
df
```



	Name	Age	Gender	Height
0	Alice	25	F	1.62
1	Bob	32	M	1.78
2	Charlie	18	M	1.65

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Alice'],
        'Age': [25, 32, 18, 25],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df = df.drop_duplicates(subset=['Name', 'Age'], keep='last')
df
```



	Name	Age	Gender	Height
1	Bob	32	M	1.78
2	Charlie	18	M	1.65
3	Alice	25	M	1.83

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Alice'],
        'Age': [25, 32, 18, 25],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df_sample = df.sample(n=2)
df_sample
```



	Name	Age	Gender	Height
0	Alice	25	F	1.62
3	Alice	25	M	1.83

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Alice'],
        'Age': [25, 32, 18, 25],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
print(df)
df_sample = df.sample(frac=0.5)
df_sample
```



	Name	Age	Gender	Height
0	Alice	25	F	1.62
1	Bob	32	M	1.78
2	Charlie	18	M	1.65
3	Alice	25	M	1.83

	Name	Age	Gender	Height
0	Alice	25	F	1.62
2	Charlie	18	M	1.65

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Alice'],
        'Age': [25, 32, 18, 25],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
print(df)
df_sample = df.sample(n=2, axis=1)
df_sample
```

	Name	Age	Gender	Height
0	Alice	25	F	1.62
1	Bob	32	M	1.78
2	Charlie	18	M	1.65
3	Alice	25	M	1.83

	Name	Gender
0	Alice	F
1	Bob	M
2	Charlie	M
3	Alice	M

```
import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'David', 'Emily'],
        'age': [25, 30, 35, 40, 45],
        'salary': [50000, 60000, 70000, 80000, 90000]}
df = pd.DataFrame(data)
top_salaries = df.nlargest(2, columns='salary')
print(top_salaries)
```

	name	age	salary
4	Emily	45	90000
3	David	40	80000

```
import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'David', 'Emily'],
        'age': [25, 30, 35, 40, 45],
        'salary': [50000, 60000, 70000, 80000, 90000]}
df = pd.DataFrame(data)
top_salaries = df.nsmallest(2, columns='salary')
print(top_salaries)
```

	name	age	salary
0	Alice	25	50000
1	Bob	30	60000

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.query('Age >= 30')
df1
```

	Name	Age	Gender	Height
1	Bob	32	M	1.78
3	Dave	47	M	1.83

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.query('Name.str.contains("a") and Height > 1.7')
df1
```

	Name	Age	Gender	Height
3	Dave	47	M	1.83

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.query('Gender == ["F", "M"] and Height <= 1.65')
df1
```



	Name	Age	Gender	Height
0	Alice	25	F	1.62
2	Charlie	18	M	1.65

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.loc[:, 'Age']
df1
```



	Age
0	25
1	32
2	18
3	47

```
import pandas as pd
data = {'Name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'Age': [25, 32, 18, 47],
        'Gender': ['F', 'M', 'M', 'M'],
        'Height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df1=df.loc[:, ['Name', 'Age']]
df1
```



	Name	Age
0	Alice	25
1	Bob	32
2	Charlie	18
3	Dave	47

```
import pandas as pd
data = {'Name':['Jai', 'Princi', 'Gaurav', 'Anuj'], 'Age':[27, 24, 22,2], 'Address': ['Delhi', 'Kanpur', 'Allahabad', 'Kannauj'], 'Qualification': ['MSc', 'MA', 'MCA', 'Phd']}
df = pd.DataFrame(data)
df1 = df.iloc[:4]
df1
```



	Name	Age	Address	Qualification
0	Jai	27	Delhi	Msc
1	Princi	24	Kanpur	MA
2	Gaurav	22	Allahabad	MCA
3	Anui	2	Kannau	Phd

```
import pandas as pd
data = {'Name':['Jai', 'Princi', 'Gaurav', 'Anuj'], 'Age':[27, 24, 22,2], 'Address': ['Delhi', 'Kanpur', 'Allahabad', 'Kannauj'], 'Qualification': ['MSc', 'MA', 'MCA', 'Phd']}
df = pd.DataFrame(data)
df1 = df.iloc[1:3, 2:3]
df1
```



	Address
1	Kanpur
2	Allahabad

```
import pandas as pd
data = {'Name':['Jai', 'Princi', 'Gaurav', 'Anuj'], 'Age':[27, 24, 22,2], 'Address': ['Delhi', 'Kanpur', 'Allahabad', 'Kannauj'], 'Qualification': ['MSc', 'MA', 'MCA', 'Phd']}
df = pd.DataFrame(data)
df1 = df.iloc[[1, 3], [1, 3]]
df1
```

	Age	Qualification
1	24	MA
3	2	Phd

```
import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'Dave'], 'age': [25, 32, 18, 47], 'gender': ['F', 'M', 'M', 'M'], 'height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df_filtered = df[df['age'] > 30]
print(df_filtered)
```

	name	age	gender	height
1	Bob	32	M	1.78
3	Dave	47	M	1.83

```
import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'Dave'], 'age': [25, 32, 18, 47], 'gender': ['F', 'M', 'M', 'M'], 'height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df_filtered = df[(df['gender'] == 'M') & (df['height'] > 1.7)]
print(df_filtered)
```

	name	age	gender	height
1	Bob	32	M	1.78
3	Dave	47	M	1.83

```
import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'Dave'], 'age': [25, 32, 18, 47], 'gender': ['F', 'M', 'M', 'M'], 'height': [1.62, 1.78, 1.65, 1.83]}
df = pd.DataFrame(data)
df_filtered = df[df['name'].str.startswith(('A', 'C'))]
print(df_filtered)
```

	name	age	gender	height
0	Alice	25	F	1.62
2	Charlie	18	M	1.65

```
import pandas as pd
data = {
    'Name': ['John', 'Sarah', 'Mike', 'Emily', 'David'],
    'Age': [25, 31, 29, 35, 27],
    'Gender': ['M', 'F', 'M', 'F', 'M'],
    'Salary': [50000, 70000, 60000, 80000, 55000]}
df = pd.DataFrame(data)
print(df.head(3))
```

	Name	Age	Gender	Salary
0	John	25	M	50000
1	Sarah	31	F	70000
2	Mike	29	M	60000

```
import pandas as pd
data = {
    'Name': ['John', 'Sarah', 'Mike', 'Emily', 'David'],
    'Age': [25, 31, 29, 35, 27],
    'Gender': ['M', 'F', 'M', 'F', 'M'],
    'Salary': [50000, 70000, 60000, 80000, 55000]}
df = pd.DataFrame(data)
print(df.tail(2))
```

	Name	Age	Gender	Salary
3	Emily	35	F	80000
4	David	27	M	55000

```
import pandas as pd
data = {
    'Name': ['John', 'Sarah', 'Mike', 'Emily', 'David'],
    'Age': [25, 31, 29, 35, 27],
    'Gender': ['M', 'F', 'M', 'F', 'M'],
    'Salary': [50000, 70000, 60000, 80000, 55000]}
df = pd.DataFrame(data)
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5 entries, 0 to 4
Data columns (total 4 columns):
#   Column  Non-Null Count  Dtype
---

```



```

0   Name    5 non-null    object
1   Age     5 non-null    int64
2   Gender  5 non-null    object
3   Salary  5 non-null    int64
dtypes: int64(2), object(2)
memory usage: 288.0+ bytes

```

```

import pandas as pd
data = {
    'Name': ['John', 'Sarah', 'Mike', 'Emily', 'David'],
    'Age': [25, 31, 29, 35, 27],
    'Gender': ['M', 'F', 'M', 'F', 'M'],
    'Salary': [50000, 70000, 60000, 80000, 55000]
}
df = pd.DataFrame(data)
print(df.describe())

```

```

↔
      Age      Salary
count  5.000000  5.000000
mean   29.400000  63000.000000
std     3.847077  12041.594579
min    25.000000  50000.000000
25%    27.000000  55000.000000
50%    29.000000  60000.000000
75%    31.000000  70000.000000
max    35.000000  80000.000000

```

```

import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'Dave'],
        'age': [25, 30, 35, 40],
        'score': [90, 80, 85, 95]}
df = pd.DataFrame(data)
df_sorted = df.sort_values(by='age', ascending=False)
print(df_sorted)

```

```

↔
   name  age  score
3   Dave   40     95
2  Charlie  35     85
1    Bob   30     80
0   Alice  25     90

```

```

import pandas as pd
data = {'name': ['Alice', 'Bob', 'Charlie', 'Dave', 'Emily', 'Frank'],
        'gender': ['F', 'M', 'M', 'M', 'F', 'M'],
        'age': [25, 35, 40, 28, 30, 45],
        'salary': [50000, 70000, 60000, 80000, 65000, 90000]}
df = pd.DataFrame(data)
grouped = df.groupby('gender')['salary'].mean()

```